

Article Overview

Steel Wire Armored (SWA) fiber optic cables use galvanized steel wires or corrugated steel tape to provide mechanical protection for both indoor and outdoor installations.

Overview of SWA Fiber Optic Cables

Steel Wire Armored (SWA) fiber optic cables are designed to protect optical fibers from mechanical stress, crushing, rodent attacks, and environmental hazards while maintaining high-speed data transmission . They are commonly used in underground installations, outdoor networks, industrial automation, and direct burial applications . SWA cables are suitable for both single-mode (SMF) and multimode (OM1-OM5) fibers, depending on the distance and bandwidth requirements .

Types of Steel Wire Armoring

o Galvanized Steel Wire (SWA)

- o Individual steel wires are helically wound around the cable core.
- o Provides high tensile strength for aerial or direct burial applications.
- o Protects against crushing, impact, and rodent damage.
- o Commonly used in outdoor and industrial environments .

o Corrugated Steel Tape (STA)

- o A corrugated steel tape is wrapped around the cable core.
- o Offers flexible yet robust protection.
- o Often combined with water-blocking materials for moisture resistance.
- o Suitable for long-distance outdoor installations .

Cable Construction and Specifications

- o Core: Optical fibers (single-mode or multimode) with primary coatings for protection.
- o Strength Members: Kevlar yarns or E-glass yarns to enhance tensile strength.
- o Armoring: Either galvanized steel wires or corrugated steel tape.
- o Outer Sheath: UV-stabilized, weather-resistant, or LSZH (Low Smoke Zero Halogen) material for environmental protection .
- o Water Blocking: Gel-filled or water-swallowable tapes to prevent moisture ingress.
- o Mechanical Ratings:
 - o Tensile Strength: Designed to withstand installation and operational loads.
 - o Crush Resistance: Armoring protects fibers from external pressure.
 - o Rodent Resistance: Steel wires prevent damage from gnawing animals .

Fiber Optic Cable Steel Wire Type

Applications

- o Telecommunication Backbones: Single-mode SWA cables for long-distance, high-speed data transmission.
- o Data Centers and LANs: Multimode SWA cables for high-bandwidth, shorter-distance connections.
- o Direct Burial: Armored cables resist soil pressure, moisture, and chemical exposure.
- o Industrial Environments: Protection against mechanical stress, vibration, and harsh conditions .

Summary

Steel Wire Armored fiber optic cables are essential for durable, high-performance network installations in challenging environments. The choice between galvanized steel wire and corrugated steel tape depends on the installation type, mechanical protection requirements, and environmental conditions. Proper selection ensures long-term reliability, minimal signal loss, and protection against physical and environmental hazards .

Ever wondered how fiber optic cables are made? Learn more about the materials required and manufacturing process

This article summarizes the major outdoor fiber optic cable types and their distinguishing features. You can Identify

Belden fiber products are third-party tested by either ETL or UL and approved for use according to the National Electric Code.

THE BASICS OF FIBER OPTIC CABLE a Tutorial Although fiber optic cable is still more expensive than other types of cable, it's

Explore the top 10 fiber optic cable types for 400G/800G networks. From ADSS to MPO, learn technical

Ftth fiber optic cable, steel wire and rods reinforced, other called butterfly type drop cable is designed to

Fiber optic cables are composed of one or more transparent fibers enclosed in protective coverings and strength members. Fiber

Topic: Fiber Optic Cable Table of Contents: The FOA Reference Guide To Fiber Optics Fiber Optic Cable

With 2 billion kilometers of fiber optic cables installed around the globe, Corning continues to lead the industry in product quality and

What Is SWA Fiber Optic Cable? A SWA Fiber Optic Cable, or Steel Wire Armoured Fibre Optic Cable, is a

Fiber Optic Cable Steel Wire Type

type of

Explore fiber optic cable types, features, and applications. Omnitron Systems explains single-mode, multi

These HELUCOM® fibre optic universal cables are characterised by a compact design with swellable material. The metallic

An optical ground wire (also known as an OPGW or, in the IEEE standard, an optical fiber composite overhead ground wire) is a type

Featuring steel wire armor (SWA), stranded loose tubes, and water-blocking elements, this cable is ideal

Get to know armored optical fiber cable types, applications, specifications, prices, and everything. From the

AFL's stainless steel fiber optic tubes provide exceptional protection and performance in subsea and harsh environments. Designed

Web: <https://www.millstraining.co.za>

